



**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

**Preliminary Assessment  
of an  
Identified Illegal Drug Laboratory  
at  
3415 E 29 Ave.  
Denver, CO 80205**

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April 28, 2010

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## EXECUTIVE SUMMARY

On Thursday, April 1, 2010, personnel from Forensic Applications Consulting Technologies, Inc. (FACTs) were contracted to perform a standard cursory evaluation for the presence of methamphetamine at 3415 E 29th Ave. Denver, CO 80205 (the subject property).

Samples taken during the cursory evaluation conclusively demonstrated the presence of methamphetamine contamination, and, pursuant to Colorado Revised Statutes, CRS §16-13-103, the residence and all remaining personal items therein met the definition of an “illegal drug laboratory.”

On April 14, 2010, personnel from FACTs performed a State mandated Preliminary Assessment pursuant to Colorado Regulation 6 CCR 1014-43, Part 4. Based on the results of these tests and the totality of the circumstances, FACTs makes the following observations:

- The property exhibits overt noncompliance with Colorado’s methamphetamine cleanup standards.
- “Discovery” and “Notification” existed by virtue of the FACTs April 7, 2010 report detailing the findings of the April 1, 2010 cursory evaluation sampling.
- An illegal drug lab, as that term is defined in CRS §25-18.5-101, existed at the subject property from April 1, 2010 forward, and continues to exist at the time of this report.
- Subjective observations by FACTs provided *prima facie* evidence that methamphetamine contamination occurred at the property as a result of heavy smoking of methamphetamine at the property.
- A Class 1 Public Nuisance, as defined in CRS §16-13-303(1) existed at the subject property from April 1, 2010 forward, and continues to exist at the time of this report.
- Following the decontamination activities, post-decontamination sampling must occur to confirm the efficacy of the decontamination and to issue a Decision Statement before reentry or occupancy of the subject property may occur.
- The Preliminary Assessment was conducted by Mr. Caoimhín P. Connell, Forensic Industrial Hygienist, and was assisted by Mr. Rob Seel, technician.<sup>1</sup>

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<sup>1</sup> Mr. Seel has received a training certificate in Clandestine Drug Lab Safety through the Colorado Regional Community Policing Institute (CRCPI) sponsored by the US Dept. of Justice High Intensity Drug Trafficking Area fund.



# REGULATORY REQUIREMENTS

## ***Federal Requirements***

All work associated with this Preliminary Assessment was performed in a manner consistent with regulations promulgated by the Federal Occupational Safety and Health Administration (OSHA).

## ***State Requirements***

### **Preliminary Assessment**

According to Colorado State Regulation 6-CCR 1014-3, following the discovery of an illegal drug lab, as that term is defined in CRS §25-18.5-101, and following “notification,” the property must either be demolished or a “Preliminary Assessment” must be conducted at that property to characterize extant contamination (if any), and to direct appropriate decontamination procedures (if any). Pursuant to these regulations, information obtained in the Preliminary Assessment, and those findings, enter the public domain and are not subject to confidentiality.<sup>2</sup>

The Preliminary Assessment must be conducted according to specified requirements<sup>3</sup> by an authorized Industrial Hygienist as that term is defined in CRS §24-30-1402. This document, and all associated appendices and photographs, is the “Preliminary Assessment” pursuant to those regulations. Included with this discussion is a read-only digital disc. The disc contains mandatory information and photographs required by State regulation for a Preliminary Assessment. This Preliminary Assessment is not complete without the DVD and all associated support documents.

Pursuant to CRS §25-18.5-105, the subject property was deemed a “public health nuisance.” Pursuant to CRS §16-13-303, the subject property, and all of its contents, was deemed a Class 1 Public Nuisance. As such, the subject property must be remediated according to State Board of Health regulations 6-CCR-1014-3 or demolished (CRS §25-18.5-103).

### **Discovery and Notification**

Discovery and Notification occurred at the subject property by virtue of the April 7, 2010 report of findings written by FACTs and submitted to the client, Ms. Kristi Capps.

### **Preliminary Hypothesis**

During the Preliminary Assessment, the initial hypothesis is made that the subject area is clean and data will be collected to find support for this hypothesis. Any reliable data that fails to support the hypothesis, including police records, visual clues of illegal production, storage, or use of methamphetamine, or documentation of drug paraphernalia

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<sup>2</sup> Section 8.26 of 6 CCR 1014-3

<sup>3</sup> Section 4 of 6 CCR 1014-3



being present, is considered conclusive, and requires the Industrial Hygienist to accept the null hypothesis and declare the area non-compliant.<sup>4</sup> The strength of evidence needed to reject the hypothesis is low, and is only that which would lead a reasonable person, trained in aspects of meth laboratories, to conclude the *presence* of methamphetamine, and/or its precursors or waste products as related to processing.

Contrary to common belief, sampling is not required during a Preliminary Assessment; however, if sampling is performed, it is conducted in the areas with the highest probability of containing the highest possible concentrations of contaminants. According to the State regulations:<sup>5</sup>

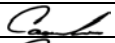
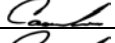
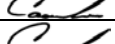
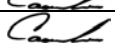
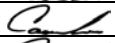

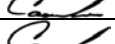




*Identification and documentation of areas of contamination. This identification may be based on visual observation, law enforcement reports, proximity to chemical storage areas, waste disposal areas, or cooking areas, or based on professional judgment of the consultant; or the consultant may determine that assessment sampling is necessary to verify the presence or absence of contamination.*

## Initial Statement on Hypothesis Testing

Regarding this subject property, objective sampling performed by FACTs, confirmed overt methamphetamine contamination. In the totality of circumstances any one of the samples would have challenged the Primary Hypothesis, and require FACTs to accept the null hypothesis and declare the residence as non-compliant.

## Elements of the Preliminary Assessment

Specific mandatory information must be presented as part of the Preliminary Assessment (PA). This discussion, in its totality, contains the mandatory information for a PA as follows:

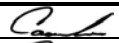
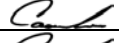

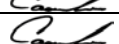
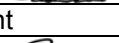

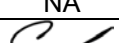

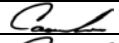

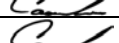


Mandatory Final Documents 6-CCR 1014-3	DOCUMENTATION	Included
§8.1	Property description field form	
§8.2	Description of manufacturing methods and chemicals	
§8.3	Law Enforcement documentation review discussion	
§8.4	Description and Drawing of Storage area(s)	
§8.5	Description and Drawing of Waste area(s)	
§8.6	Description and Drawing of Cook area(s)	
§8.7	Field Observations field form	
	FACTs Functional space inventory field form	
§8.8	Plumbing inspection field form	
	FACTs ISDS field form	
§8.9	Contamination migration field form	

**Table 1**  
**Inventory of Mandatory Elements and Documentation**

<sup>4</sup> This language and emphasis is verbatim from Appendix A (mandatory) of 6 CCR 1014-3

<sup>5</sup> Section 4.6 of 6 CCR 1014-3



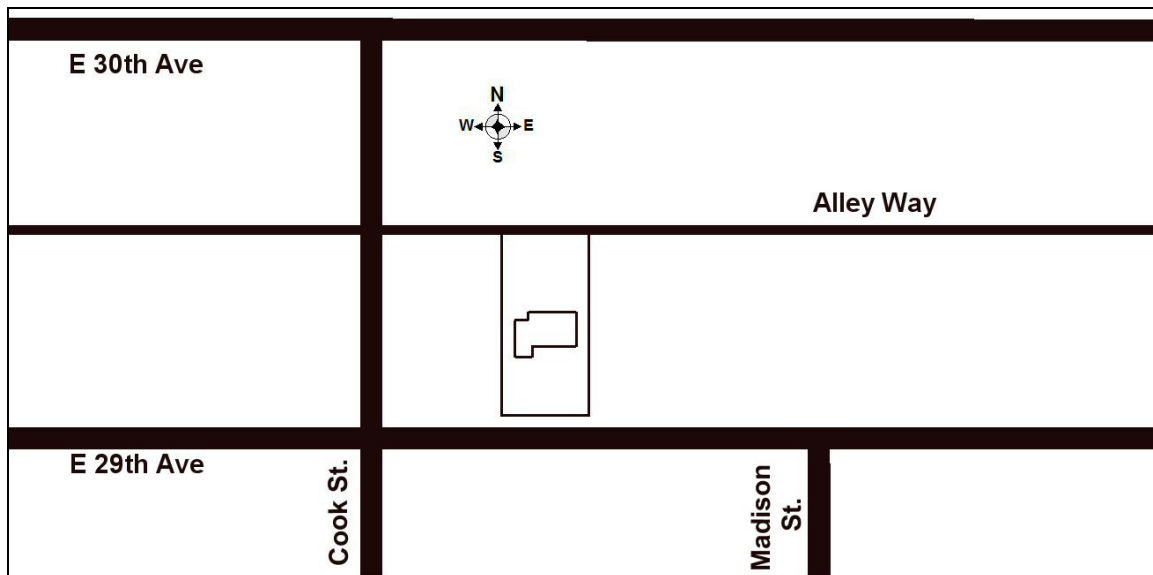
§8.10	Identification of common ventilation systems	
§8.11	Description of the sampling procedures and QA/QC	
§8.12	Analytical Description and Laboratory QA/QC	
§8.13	Location and results of initial sampling with drawings	
§8.14	FACTs health and safety procedures in accordance with OSHA	
§8.15 -§8.19	These sections are not applicable to a Preliminary Assessment	
§8.20	FACTs Pre-remediation photographs and log	
	FACTs Post-remediation photographs and log	NA
§8.21	FACTs SOQ	
§8.22	Certification of procedures, results, and variations	
§8.23	Mandatory Certification Language	
§8.24	Signature Sheet	
NA	Analytical Laboratory Reports	
	FACTs final closeout inventory document	
	FACTs Field Sampling Forms	

**Table 1 (Continued)**  
**Inventory of Mandatory Elements and Documentation**

### Subject Structure

The primary residential structure, which is the subject of this report, was listed by the Denver County Assessor's Office as a 816 square foot ranch house built *circa* 1949. For the purposes of regulatory compliance, traditionally non-taxable spaces (such as the garage) must be included in the assessment. Therefore, for the purposes of this Preliminary Assessment, the approximate total square feet of impacted floor space is listed as 1,250 square feet and sampling requirements must be based on this value.

A general aerial layout of the structure is depicted in the drawing below. Figure 1, below, is not to scale; however, the drawing is proportional.



**Figure 1**  
**General Site Layout**



## **Review of Law Enforcement Documentation**

As part of the Preliminary Assessment, FACTs is required by regulation<sup>6</sup> to review available law enforcement documents pertinent to a subject property. During this project, the Denver Police Department personnel exhibited the highest level of professionalism and cooperated with the requirements of our Preliminary Assessment. In addition to the information provided by a search of the call history, personnel from Denver Police Department informed FACTs that none of the information available indicated law enforcement action involving controlled substances at the subject property.

## **County**

### **Governing Body**

The City and County of Denver has informed us that the “Governing Body” as defined in CRS §25-18.5-101 for this subject property is:

Mr. Gene Hook  
Environmental Protection Specialist  
City and County of Denver  
Department of Environmental Health  
Environmental Protection Division  
201 W. Colfax Ave., Dept. #1009  
Denver, CO 80202

### ***Visual Inspection of the Property***

As part of the Preliminary Assessment, on Tuesday, April 14, 2010, Mr. Caoimhín P. Connell, Forensic Industrial Hygienist with FACTs, performed a visual inspection of the subject property. Pursuant to regulatory requirements, the subject property was assigned into “functional spaces,” and an indicia inventory and assessment was performed for each functional space.

The property was essentially in an “unoccupied” condition but contained residual chattels, and major appliances.

To protect the property owner against the introduction of contaminants into the subject property, the Industrial Hygienist and his Technician donned fresh Tyvek<sup>®</sup> suits and booties upon entering the property. All equipment brought into the subject property was staged at or near the front door. The ladder FACTs used during this assessment had been cleaned at a car wash prior to use.

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<sup>6</sup> 6 CCR 1014-3 (Section 4.2)



# **SAMPLE COLLECTION**

## ***Wipe Samples***

The samples collected throughout the subject property comprised of “discreet” samples. Discreet samples are a single wipe, collected from a single area, and submitted for analysis as a unique location.

## **Methamphetamine**

Wipe samples were collected in a manner consistent with State regulations. The wipe sample medium was individually wrapped commercially available Johnson & Johnson™ gauze pads. Each gauze material was assigned a lot number for quality assurance and quality control (QA/QC) purposes and recorded on a log of results. Each pad was moistened with reagent grade methyl alcohol. Each batch of alcohol was assigned a lot number for QA/QC purposes and recorded on a log of results. Each proposed sample area was delineated with a measured outline.

Each wipe sample was collected by methodically wiping the entire surface of the selected area with moderate pressure; first in one direction and then in the opposite direction, folding the gauze to reveal fresh material as necessary. Each sample was returned to its centrifuge tube and capped with a screw-cap. The wipe samples were submitted for analysis to Analytical Chemistry Inc. in Tukwila, Washington.

## **QA/QC Precautions**

The sampling media were prepared in small batches in a clean environment (FACTs Corporate Offices). The sample media were inserted into individually identified disposable plastic centrifuge tubes with caps.

## ***Field Blanks***

A field blank was submitted pursuant to regulation. The blank was submitted “blind” meaning the analyzing laboratory had no indication that one or more of the samples may be QA/QC related.

## **Cross Contamination**

Prior to the collection of each specific sample area, the Industrial Hygienist donned fresh surgical gloves, to protect against the possibility of cross contamination.

## ***Collection Rationale***

## **Primary Objective**

It is a common misconception that the Industrial Hygienist is required to collect samples during a Preliminary Assessment of an illegal drug lab. However, no such requirement exists in Colorado. Rather, regarding samples, the regulations state:





#### Pre-decontamination sampling

In pre-decontamination sampling, the question that is being asked is “Is there evidence of the presence of methamphetamine production in this area?” The assumption (hypothesis) is that the area is clean i.e. “compliant,” and data will be collected to find support for the hypothesis. Data (such as samples) are collected to “prove” the area is compliant.

Sampling, if it is performed, is conducted in the areas potentially containing the highest possible concentrations of contaminants. Any data that disproves the hypothesis, including police records, visual clues of production, storage, or use or documentation of drug paraphernalia being present, is considered conclusive, and leads the consultant to accept the null hypothesis and declare the area non-compliant. The strength of evidence needed to reject the hypothesis is low, and is only that which would lead a reasonable person, trained in aspects of methamphetamine laboratories, to conclude the presence of methamphetamine, its precursors as related to processing, or waste products.

Similarly, there is a misconception that if samples are collected, and the laboratory results are below the value often misinterpreted as the State’s regulatory threshold value (0.5 µg/100 cm<sup>2</sup>), the samples necessarily indicate that the area is not contaminated and no action is required. However, the regulatory threshold values are exclusively to be used as *prima facie* evidence during final verification activities in the absence of all other information. During a Preliminary Assessment, there is no *de minimis* concentration of methamphetamine below which a statement of compliance can be made in the absence of final verification sampling. Although State regulation does not require samples to be collected during a Preliminary Assessment, as part of this Preliminary Assessment, samples were collected.

The data quality objectives of the samples collected during the Preliminary Assessment were to determine, within the context of the regulation, whether or not specific areas, such as the attic and the crawlspace, could be excluded from the remediation process. Based on those sample results, we were unable to exclude any areas, and contamination was confirmed to be present throughout the entire structure.



## Sample Results

### Methamphetamine

The results of the methamphetamine samples are summarized in the table below.

Sample ID	Sample Item and Location	Sample Type	Result µg/100 cm <sup>2</sup>
CM040110-01A	Top of blind in living room	Cursory Composite	175.31
CM040110-01B	Living room return grille		
CM040110-01C	Kitchen top of door jamb		
CM040110-01D	Bathroom top of medicine chest		
CM040110-01E	NW Bed room N wall at ghosting		
CM040110-01	Composite		
CM040110-02A	SW Bedroom top of closet door jamb	Cursory Composite	35.00
CM040110-02B	Garage top of door mechanism		
CM040110-02C	Attic top of electrical junction		
CM040110-02D	Crawl space top of supply duct		
CM040110-02E	Crawlspace mason jar		
CM040110-02	Composite		
CM041410-1	Attic on metal pipe	Preliminary	1.8
CM041410-2	Garage on door opening mechanism	Preliminary	1.3
CM041410-3	Crawlspace on makeup air vent	Preliminary	10.0
CM041410-4	Field Blank	Preliminary	BDL
CM041410-5	Furnace interior from living room vent	Preliminary	20.6

\*BDL - Below Detection Limit

**Table 2**  
**Results of Preliminary Methamphetamine Wipe Samples**

### Wipe Sample Results

In the above table, the shaded samples (prefix CM040110) are the samples that were collected pursuant to Colorado's Real Estate methamphetamine disclosure and testing statute as described by CRS §38-35.7-103(2)(a). As such, these samples were not subject to the regulatory sampling requirements of 6 CCR 1014-3. Nevertheless, the Industrial Hygienist is required by regulation to incorporate those sample results into the Preliminary Assessment.

### Quality Assurance/Quality Control

The following section is required by regulation and is not intended to be understood by the casual reader. All abbreviations are standard laboratory use.

### Data Set

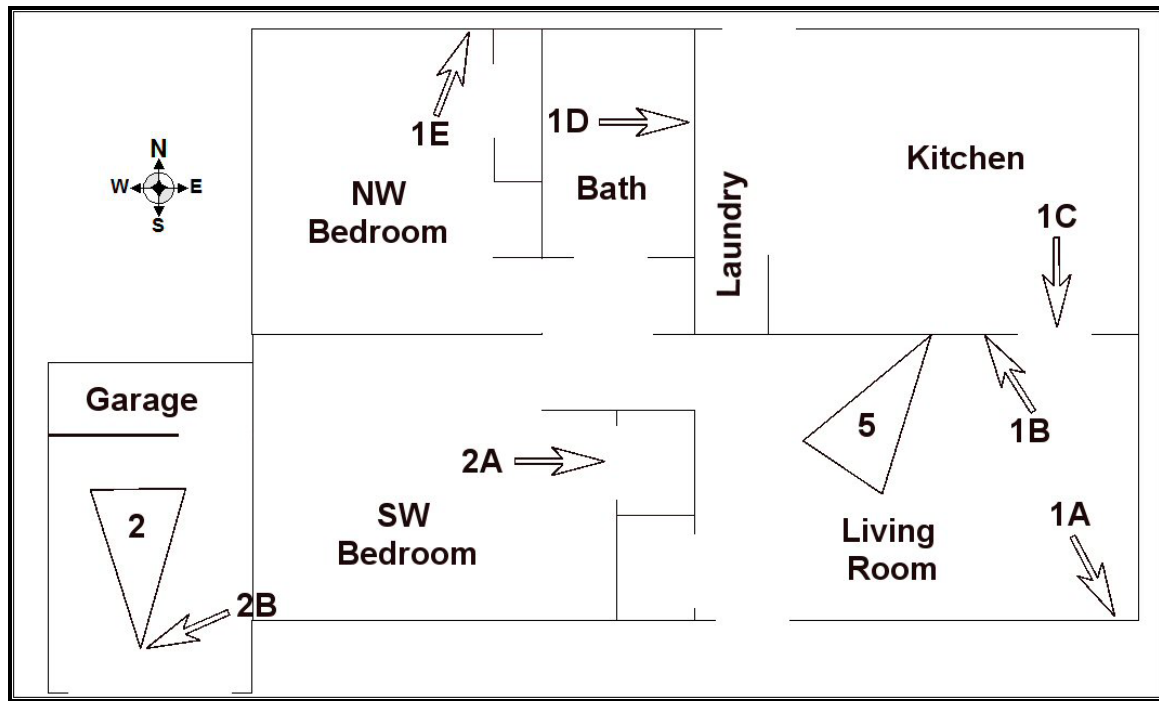
MDL was 0.004 µg; LOQ was 0.03 µg; MBX <MDL; LCS 100 µg (RPD 2%, recovery =102%); Matrix spike 0.020 µg (RPD <1%; recovery 100%); Matrix spike Dup 0.020 µg; (RPD 5%; recovery 105%); Surrogate recovery: High 104% (Sample 4), Low 92%



(Sample 5); FACTs reagents: MeOH lot #A0901 <MDL for n=3; Gauze lot G1001 <MDL for n=1. The QA/QC indicate the data met the data quality objectives; and the results do not appear to exhibit significant bias.

### **Sample Locations**

In the figures that follow, the sample locations have been presented. The drawings are stylized and not to scale. In the diagrams, the sample locations indicated by triangles were collected during the Preliminary Assessment, and those indicated by arrows were collected during the cursory evaluation.

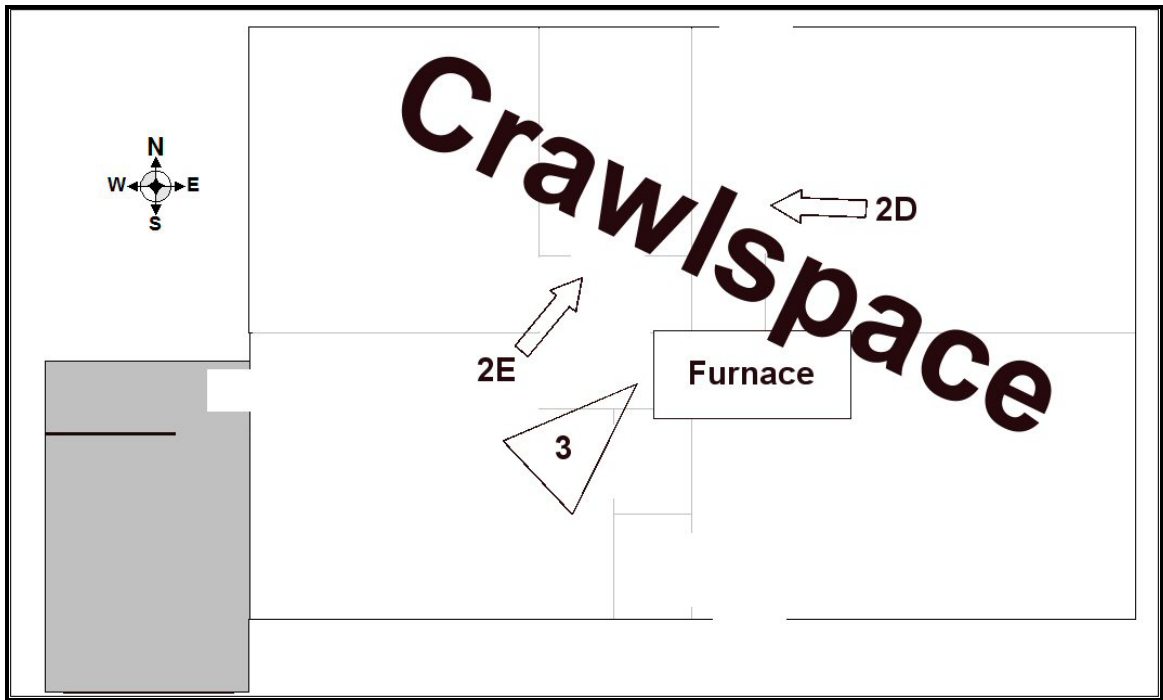


**Figure 2**  
**Sample Locations Main Floor- Not to Scale**





**Figure 3**  
**Sample Locations Attic- Not to Scale**



**Figure 4**  
**Sample Locations Crawlspace - Not to Scale**



## Identification of Cook/Storage Areas

Based on our sampling results, our observations and the totality of circumstances, we believe that the methamphetamine contamination is consistent with smoking methamphetamine in the residence. It is difficult to objectively determine which, if any, location may have been the primary location of use.

## Identification of Contamination Migration

Based on our visual assessment, we do not believe there was an high probability that contamination migrated off-site (except, possibly, through the public sewer system).

We did not observe any indications of contamination in the surrounding soils.

## FUNCTIONAL SPACE SUMMARY

During a Preliminary Assessment, the Industrial Hygienist is required by regulation to divide a subject property into “functional spaces,” and evaluate the potential for contamination in each area. The idea is to segment a property into specific areas which may present different potentials for contamination, based on the anticipated use or function conducted in that area. Thus, functions of bedrooms and bathrooms may be different, kitchens and living rooms, may be different, etc. Pursuant to regulations, a building is divided into such areas based solely on subjective professional judgment with foundational guidance in Federal Regulation.<sup>7</sup>

A general overview of each space is provided in the following discussion. Indicators are detailed in FACTs form ML5, included in the appendix of this report. For evaluation purposes, the following Functional Spaces have been identified and are addressed below:

<b>Structure Number</b>	<b>Functional Space Number</b>	<b>Describe the functional space</b> (See drawings for delineating structural features )
<b>1</b>	<b>1</b>	<b>Living Room and Closet</b>
<b>1</b>	<b>2</b>	<b>Bedroom Hallway and Linen Closet</b>
<b>1</b>	<b>3</b>	<b>Bathroom</b>
<b>1</b>	<b>4</b>	<b>Northwest Bedroom</b>
<b>1</b>	<b>5</b>	<b>Southwest Bedroom</b>
<b>1</b>	<b>6</b>	<b>Kitchen and Laundry</b>
<b>1</b>	<b>7</b>	<b>Attic</b>
<b>1</b>	<b>8</b>	<b>Garage</b>
<b>1</b>	<b>9</b>	<b>Crawlspace</b>
<b>1</b>	<b>10</b>	<b>Furnace System</b>
<b>1</b>	<b>11</b>	<b>Exterior Grounds</b>

**Table 3**  
**Functional Space Inventory**

<sup>7</sup> Asbestos Containing Materials in Schools; Final Rule and Notice, Title 40 CFR Part 763, Fed. Reg. Vol. 52, No. 210, Fri. Oct. 30, 1987



## **Structure Number 1- Main Residence**

### **Functional Space 1: Living Room and Closet**

This space is delineated as the term is commonly used, and includes the entrance closet. There were no visual indicators from this functional space. A Composite sample and a discrete sample from the duct work in this room both indicated noncompliant concentrations of contaminant.

### **Functional Space 2: Bedroom Hall and Linen Closet**

This is the small central space that connects the four major rooms of the house. We did not observe any subjective visual indicators in this space.

### **Functional Space 3: Bathroom**

This space is delineated as the term is commonly used. A composite sample collected in this area indicated noncompliant concentrations of contaminant

### **Functional Space 4: Northwest Bedroom**

This space includes the closet in the room and is delineated by four walls and is deemed as the term is commonly used. A composite sample collected in this area indicated noncompliant concentrations of contaminant

### **Functional Space 5: Southwest Bedroom**

This space includes the closet in the room and is delineated by four walls and is deemed as the term is commonly used. A composite sample collected in this area indicated noncompliant concentrations of contaminant. There were no visual indicators in this space.

### **Functional Space 6: Kitchen and Laundry**

The kitchen is defined as the term is commonly used. The space includes the small area to the west which houses the hot water heater and laundry hook-ups. A composite sample collected in this area indicated noncompliant concentrations of contaminant. There were no visual indicators in this space.

### **Functional Space 7: Attic**

The attic is defined as the term is commonly used. The attic includes a small area over the garage. A composite sample collected in this area indicated noncompliant concentrations of contaminant, and, a discrete sample collected from the metal pipe in the eastern end of the attic confirmed noncompliant concentrations (1.8 µg/100 cm<sup>2</sup>). Since the attic can be entered and is a potential storage use area, it must be included in the remediation plan.

### **Functional Space 8: Garage**

Although attached to the main structure, the garage cannot be accessed from the residence. The garage is defined as the term is commonly used. Access to the crawlspace is found in the garage, as well as access to the attic. A composite sample



collected in this area indicated noncompliant concentrations of contaminant, and a discreet sample collected from the top of the garage door opening mechanism confirmed noncompliant concentrations (1.3 µg/100 cm<sup>2</sup>).

## Functional Space 9: Crawlpace

This space is an area under the residence. The furnace and forced air system are located centrally in the crawlpace. The crawlpace contained inconclusive visual indicators of manufacturing. Two composite samples collected in this area indicated noncompliant concentrations of contaminants, and a discreet sample collected from the central makeup air stack confirmed noncompliant concentrations (10.0 µg/100 cm<sup>2</sup>).

## Furnace

Although arguably not a functional space *per se*, the sample collected from the interior duct of a supply vent for the furnace indicated that methamphetamine contamination in that system was significantly elevated (20.6 µg/100 cm<sup>2</sup>).

The Industrial Hygiene and medical communities now know that the mere use of methamphetamine in a home results in elevated exposures to the occupants via airborne migration. When methamphetamine is smoked, between 80%<sup>8</sup> and half<sup>9</sup> of the substance is released from the user's pipe. Of that material which is inhaled, between 33%<sup>10</sup> and 10%<sup>11</sup> of the nominal dose is not absorbed into the body, but rather exhaled back into the ambient air.

Recent work conducted by Industrial Hygienists at the National Jewish Hospital<sup>12</sup> in Denver, indicated that a single use of methamphetamine, by smoking, would result in an average residential area ambient airborne concentration of methamphetamine ranging

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<sup>8</sup> Cook CE, *Pyrolytic Characteristics, Pharmacokinetics, and Bioavailability of Smoked Heroin, Cocaine, Phencyclidine, and Methamphetamine* (From: Methamphetamine Abuse: Epidemiologic Issues and Implications Research Monograph 115, 1991, U.S. Department Of Health And Human Services Public Health Service Alcohol, Drug Abuse, and Mental Health Administration National Institute on Drug Abuse)

<sup>9</sup> Cook CE, Jeffcoat AR, Hill JM, et al. *Pharmacokinetics of Methamphetamine Self-Administered to Human Subjects by Smoking S-(+)-Methamphetamine Hydrochloride*. Drug Metabolism and Deposition Vol. 21 No 4, 1993 as referenced by Martyny JW, Arbuckle SL, McCammon CS, Erb N, Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)

<sup>10</sup> Harris DS, Boxenbaum H, Everhart ET, Sequeira G, et al, *The bioavailability of intranasal and smoked methamphetamine*, Pharmacokinetics and Drug Disposition, 2003;74:475-486.)

<sup>11</sup> Cook CE, Jeffcoat AR, Hill JM, Pugh DE, et al *Pharmacokinetics of methamphetamine self-administered to human subjects by smoking S-(+)-methamphetamine hydrochloride* Drug Metabolism and Disposition, Vol 21, No. 4, pp. 717-723, 07/01/1993

<sup>12</sup> Martyny JW, Arbuckle SL, McCammon CS, Erb N, *Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine* (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)



from 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to over 130  $\mu\text{g}/\text{m}^3$ . These authors found that smoking methamphetamine just once in the residence can result in surfaces being contaminated with methamphetamine. The authors concluded:

*"If methamphetamine has been smoked in a residence, it is likely that children present in that structure will be exposed to airborne methamphetamine during the "smoke" and to surface methamphetamine after the 'smoke'."*<sup>13</sup>

Since it is the purpose of the ventilation system to move air throughout the structure, and the furnace (as evidenced by the ductwork sample) conclusively contained significantly elevated concentrations of methamphetamine, we conclude the furnace was an effective mechanism of dissemination and may be a continued source of contamination unless appropriately addressed.

The results of the furnace sample alone would lead a reasonable person, trained in aspects of meth laboratories, to conclude the *presence* of widespread elevated methamphetamine contamination throughout the entire occupied space, all other sample results notwithstanding.

Therefore, it is for this reason that FACTs confidently concludes that, based on just this sample alone, an high probability of elevated concentrations of methamphetamine exists throughout the residence including all areas that have not been confirmed as contaminated by sampling. Having said this, the remaining samples objectively confirm the existence of widespread contamination.

## EXTERIOR GROUNDS

Although not truly a functional space *per se*, the exterior grounds were assessed independently. Although we did observe some evidence of stressed vegetation, we did not observe any indicators that would suggest the exterior grounds were adversely affected by controlled substance activities.

Two notable areas of stressed vegetation were observed: 1) A small 18 inch by 18 inch section of grass at the far north end of the back yard. The location and size were consistent with an old domestic trash incinerator consistent with homes of this age. 2) Along the west side of the backyard was a well delineated section of stressed vegetation. The size, delineation and location of the section was consistent with a dog-run or a garden.

We did not observe any exterior conditions that would suggest illegal discharge of waste contaminants.

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<sup>13</sup> Martyny JW, Arbuckle SL, McCammon CS, Erb N, *Methamphetamine Contamination on Environmental Surfaces Caused by Simulated Smoking of Methamphetamine* (The publication of this study is currently pending. Copies of the study are available from the Colorado Alliance for Drug Endangered Children.)





## SEWERAGE SYSTEM

The Denver County Assessor's Office indicates the subject property is on city water and city sewer. Therefore, no inspection of an exterior sewer system, septic tank or leach field was made.

## CONCLUSIONS

Based on the totality of the circumstances, including our subjective observations and objective data from sampling, we find that there is insufficient evidence to support the preliminary hypothesis and we accept the null hypothesis and conclude that widespread methamphetamine presence exists throughout the residential structure of the subject property.

Based on our observations, the entire residence, including the attic, garage, crawlspace, and furnace system must be subjected to remediation consistent with the regulatory requirements.

Based on our experience, it may be impossible to economically decontaminate the furnace and associated ductwork, and the system may have to be removed and replaced. We have included alternative options in the accompanying scope of work.

## RECOMMENDATIONS

Based on our observations, and laboratory results, we recommend standard industry practices for decontamination to be followed. The remediation contractor should be given full responsibility for their own standard operating procedures. The following are provided as guidance and reflect standard practices for the remediation of similar properties. The Governing Body has statutory authority to require a greater degree of decontamination of the subject property.

### ***Universal Site Requirements***

1. An on-site storage container should be established on the grounds (such as a poly lined and covered roll on-roll off container (ro-ro) or temporary trailer).
2. The on-site container shall be secured with a padlock at all times when not immediately manned by remediation personnel.
3. A licensed contractor, who is trained and experienced in methlab decontamination, as required by State regulations, should be contracted for the decontamination work. All work performed at the residence should be conducted by an experienced contractor whose employees are documented to have been properly trained in accordance with 29 CFR §1910.120 and Colorado Revised Statute §25-18.5-104; *Entry into illegal drug laboratories*.



4. We recommend the decontamination process be conducted in Level C PPE ensembles with a minimum of half-face APRs or PAPRs.
5. We recommend that a decontamination corridor with showers be established at the back door.
6. All remediation work performed at the residence should be conducted under written contract with a reputable remediation company qualified to perform the work.
7. All work performed at the residence should be conducted with open communication and cooperation with the City and County of Denver.
8. Discovery of any child pornography and/or controlled substances shall be immediately reported to the Denver Police Department.
9. Discovery of any booby trap devices shall be immediately reported to the Denver Police Department and the contractor shall immediately evacuate until further notice.
10. All remediation work should be presumed to be pursuant to Title 29 of the Code of Federal Regulations, §1910.120 until otherwise indicated.
11. The contractor *shall* be contractually obligated to perform personnel air monitoring for methamphetamine for at least one full shift employee per day to allow for support of proper PPE selection. If the air monitoring results in a concentration of greater than 120 µg methamphetamine per cubic meter, the contractor shall be required to upgrade respiratory protection to a minimum of full face APR.
12. The contractor *should* be contractually obligated to include the personnel air monitoring data in their final documentation.
13. Any contractors (and their subcontractors) should be contractually obligated, through a written contract, to decontaminate the subject property to below the statutory limits. Any recleaning required by a contractor (or their subcontractor) pursuant to a failed final assessment should be contractually obligated to be performed at the expense of the contractor.
14. Contractors should be contractually obligated to cover industrial hygiene costs of return visits and sample expenses as a result of any failed final clearance(s).
15. State regulations prohibit painting or otherwise encapsulating surfaces prior to final clearance sampling by the Industrial Hygienist.



16. State regulations prohibit the use of strong oxidizers to mask the presence of methamphetamine; no cleaning agents greater than 5% hydrogen peroxide (or other oxidizer) are permitted on site.
17. Following the decontamination process, and prior to the final clearance sampling by the Industrial Hygienist, the remediation contractor/subcontractor shall be contractually obligated to collect a minimum of three QA/QC wipe samples from the subject property, as part of their own QA program, and required to submit those samples for methamphetamine analysis. The contractor shall be contractually obligated to provide their wipe sampling data (including location of sample, area of sample, and analysis results), to the consulting Industrial Hygienist for review prior to final clearance sampling.
18. If the contractor's three QA/QC samples suggest that contamination in the subject property remains at a concentration in excess of  $0.25 \mu\text{g}/100 \text{ cm}^2$ , the contractor shall be contractually obligated to continue to clean, and sample, until the elevated concentrations are not observed.
19. Once the contractor's samples indicate the contamination has been sufficiently reduced, the Industrial Hygienist shall perform final clearance sampling according to 6-CCR 1014-3.

### ***Decontamination of The Residence***

The contractor may propose removal of the furnace and associated ductwork, *in toto*, or may propose cleaning, and decontamination of the ventilation system.

The following decontamination process should take place in this order: (any asbestos abatement or lead abatement issues notwithstanding):

1. Establish negative pressure pursuant to State regulations.
2. Exhaust from the negative enclosure may take place at any ground level location.
3. The contractor should establish a standard, two-chambered decon and/or bag-out/load-out at the back door.
4. Carefully bag and remove all debris and other items from the property. If the contractor discovers items of notable value that can be economically salvaged (such as coin collections, jewelry, statuary, high quality electronics), the contractor shall notify the registered property owner for guidance. Otherwise, all chattels in the residence are scheduled to be discarded without decontamination.
5. Window coverings (window blinds) should be discarded.



6. All large household appliances (dishwasher, etc) shall be wiped down and salvaged.
7. Plumbing shall be flushed pursuant to regulation.
8. Once all items are bagged and/or wrapped, the items can be transported through the airlock and transloaded to the bag-out. At the bag-out, the exterior surfaces of the bags and wrapping should be wiped down, and the bags and items may be discarded.
9. Any carpeting and associated padding should be removed and discarded.
10. Kitchen cabinets shall be cleaned and not removed, unless agreed in writing by the property owner.
11. The refrigerator shall be emptied of all contents, and the interior shall be decontaminated in a normal fashion. The exterior shall be wiped down.
12. Insulation from the attic shall be removed.
13. All debris and contents from the crawlspace shall be removed.
14. The top one inch of dirt shall be excavated and removed from the crawlspace floor.
15. Following the removal of interior contents, all surfaces in the entire interior space including the attic and crawlspace, all ceilings, all hanging fixtures, all cabinets (interior and exterior surfaces), all shelving, all floors, doors, hinges, bathtubs, sinks, appliances (interior and exterior surfaces) and every other interior surface whether specifically mentioned or not, shall be thoroughly wiped down to remove residual contamination.

Enclosures: One CD, Data package, and Appendices



## **APPENDIX A:**

### **SUPPORTING FIELD DOCUMENTS**



**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**  
**CLANDESTINE METHAMPHETAMINE LABORATORY**  
**ASSESSMENT FIELD FORMS®**

<b>FACTs project name: Capps</b>	<b>Form # ML1</b>
<b>Date: April 14, 2010</b>	
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>

**PROPERTY DESCRIPTION:**

Physical address	3415 E 29, Ave. Denver CO 80205								
Legal description or VIN	Clayton Park Addition, Block 7, Lot 19, Parcel 0255418018000								
Registered Property Owner	Kristi Carrico 1278 Aspen Drive Evergreen, CO 80439								
Number of structures	<b>One</b>								
Type of Structures (Each affected structure will need a "Functional Space" inventory)	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 60%;">1: Main structure</td><td style="width: 20%;">816</td><td style="width: 20%;">Square feet</td></tr><tr><td>2: Garage</td><td>434</td><td>Square feet</td></tr></table>			1: Main structure	816	Square feet	2: Garage	434	Square feet
1: Main structure	816	Square feet							
2: Garage	434	Square feet							
Adjacent and/ or surrounding properties	<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td>1: North: Alley and residence</td></tr><tr><td>2: South: Street front and residence</td></tr><tr><td>3: East: Residence</td></tr><tr><td>4: West Residence</td></tr><tr><td>5: General well established suburban neighborhood</td></tr></table>			1: North: Alley and residence	2: South: Street front and residence	3: East: Residence	4: West Residence	5: General well established suburban neighborhood	
1: North: Alley and residence									
2: South: Street front and residence									
3: East: Residence									
4: West Residence									
5: General well established suburban neighborhood									
General Property Observations	Well kempt, good condition, shows pride of ownership								
Presumed Production Method	Smoking methamphetamine								



**FUNCTIONAL SPACE INVENTORY**

<b>FACTs project name: Capps</b>		<b>Form # ML3</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

Structure Number	Functional Space Number	Indicia (Y/N)	Describe the functional space (See drawings for delineating structural features )
1	1		Living room and entry closet
1	2		Bedroom hallway and linen closet
1	3		Bathroom
1	4		Northwest Bedroom and Closet
1	5		Southwest Bedroom and Closet
1	6		Kitchen and Laundry
1	7		Attic
1	8		Garage
1	9		Crawlspace





**LAW ENFORCEMENT DOCUMENTATION**

<b>FACTs project name: Capps</b>		<b>Form # ML4</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

Inventory of Reviewed Documents	1: Denver Police Department Call History Inv. # 6440 2: Interviewed "Bonnie" Denver Police Department Civil Liabilities
Described method(s) of production	Smoking only
Chemicals identified by the LEA as being present	None
Cooking areas identified	None
Chemical storage areas identified	None are determinable on the available information
LE Observation on areas of contamination or waste disposal	None





**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

April 7, 2010

Detective Bowser  
Denver Police Civil Liability Bureau  
1331 Cherokee Street,  
Room 504  
Denver CO 80204

Via Fax: 720-913-7035

Dear Det. Bowser:

Forensic Applications, Inc. has been contracted to perform a "Preliminary Assessment" an illegal clandestine drug lab pursuant to Colorado Board Of Health Regulations 6-CCR-1014-3, and CRS §25-18.5-101 *et seq.* The property is located in the City of Denver at:

**3415 E 29th Ave. Denver CO 80205**

As you are aware, as part of that assessment, the Industrial Hygienist is required by regulation (6-CCR-1014-3 (§4.2)) to review available Law Enforcement documents associated with the property. Generally, we initially do not require copies of any documents; and, if preferable, we can visit the records offices and review available information there.

We would like to review any narratives regarding controlled substances or hazardous materials responses, or speak with any Law Enforcement personnel who may be familiar with the property. We are only interested in issues involving controlled substances or hazardous materials responses in the last five years. If no such records are available please let us know and we will merely make that notation in our report to the City and County of Denver Department of Health.

We will be performing the on-site assessment on April 14, 2010, and will need to review any available documents before then. We apologize for the short notice, however, we generally do not have any control over the timeframes involved.

Forensic Applications takes extreme caution to protect all Law Enforcement Sensitive information. When requested by the Law Enforcement Agency, we do NOT reveal names, document identities, or include any information considered sensitive by an investigating agency. We have developed a close working relationship with Denver Law Enforcement, and we value and respect that open line of communication. I have included my SOQ. Please feel free to call me directly with any comments or questions.

Pursuant to CRS §24-72-305.5, I affirm that upon receipt of requested records of official actions and/or criminal justice records from the Denver Police Department, such records shall not be used for the direct solicitation of business for pecuniary gain.

Sincerely,

Caoimhín P. Connell  
Forensic Industrial Hygienist

#346 P.001/012

Civil Liability Bureau  
1331 Cherokee Street  
Room 504  
Denver, CO 80204

Date	Invoice #
4/7/2010	6440

Bill To
Forensic Applications Consulting 185 Bounty Hunter's Lane Bailey, Colorado 80421

Ship To
Caoimhin Connell

Case #	Terms	Rep	Ship	Via	Location
	Due on receipt	DSM		Fax	3415 E 29th

Quantity	Item Code	Description	Price Each	Amount
1	Premise History	Premise History Documents	0.25	0.25
1	Search Fee	Search Fee	15.00	15.00

Please remit to above address.

**Total**

\$15.25

## Premise\_History

<u>Address</u>	<u>3415 E 29th Ave</u>	<u>Bldg</u>	<u>Apt</u>				<u>Dist 2- Sector 1</u>	
<u>Resp. Date</u>	<u>Incident #</u>	<u>Problem</u>	<u>Priority</u>	<u>Received</u>	<u>Dispatch</u>	<u>Arrived</u>	<u>Closed</u>	<u>Cancel Reason</u>
03/25/09 11:14	DPD-09-0181646	Threats	3	P3 Public Need	11:15:56	11:17:10	11:25:27	13:04:19 D Dispatcher Cancellation
04/21/09 19:32	DPD-09-0233515	Suspicious Occurrence	3	P3 Public Need	19:33:13	20:03:21	20:05:17	20:17:43
10/28/09 21:20	DPD-09-0623269	Domestic Violence IP-JO	1	P1 Emergency	21:34:38	21:20:38	21:28:39	0:39:24
10/30/09 2:24	DPD-09-0624883	Attempt Contact or Pickup	4	P4 Routine	2:24:44	2:24:44	2:24:44	3:30:26
11/03/09 20:27	DPD-09-0633614	Domestic Violence IP-JO	1	P1 Emergency	20:27:09	20:32:54	20:36:10	21:11:38
11/03/09 20:29	DPD-09-0633618	Domestic Violence IP-JO	1	P1 Emergency	20:32:05	20:32:12	20:36:10	21:11:38
11/17/09 1:57	DPD-09-0656508	Knock and Talk	2	P2 Urgent	1:57:57	1:57:57	1:57:57	2:31:50 D Dispatcher Cancellation
12/06/09 17:58	DPD-09-0688674	Domestic Violence IP-JO	1	P1 Emergency	18:00:52	18:00:58	18:08:50	18:31:38
12/18/09 11:33	DPD-09-0707933	Welfare Check	2	P2 Urgent	11:35:44	11:34:49	11:35:13	12:04:35

**FIELD OBSERVATIONS**

<b>FACTs project name: Capps</b>		<b>Form # ML5</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

**Structure: 1**

Indicator	Functional Space	Indicator	Functional Space
Acids	No comments	Hydrogen peroxide	No comments
Aerosol cans	No comments	Iodine	No comments
Alcohols (MeOH, EtOH)	No comments	Kitty litter	No comments
Ammonia	No comments	Lead	No comments
Ammunition	No comments	Lithium	No comments
Artistic expressions	No comments	Match components	No comments
Bags of salt	No comments	Mercury	No comments
Bases	No comments	Methamphetamine	1,2,3,4,5,6,7,8,9
Basters/Pipettes	No comments	Modified coolers	No comments
Batteries	9 ①	Needles/Syringes	No comments
Bi-phasic wastes	No comments	Other OTC	No comments
Booby traps	No comments	pH papers/indicators	No comments
Bullet holes	No comments	Phenyl-2-propanone	No comments
Burn marks	No comments	Pornography, Sex toys	No comments
Chemical storage	9 ①	Presence of cats	No comments
Colored wastes	No comments	Pseudoephedrine	No comments
Corrosion on surfaces	9 ①	Red P	No comments
Delaminating paint	No comments	Red Staining	No comments
Drug paraphernalia	No comments	Smoke detectors disabled	No comments
Empty OTC Containers	No comments	Solvents - ketones, etc	No comments
Ephedrine	No comments	Solvents -aromatics	No comments
Faeces	No comments	Squalor	No comments
Filters	No comments	Staining on floors	No comments
Forced entry marks	No comments	Staining on walls or ceiling	No comments
Gas cylinders	No comments	Structural modifications	No comments
Gerry cans	No comments	Urine containers	No comments
Glassware	9 ①	Weapons	No comments
Heating mantle	No comments	Window coverings	No comments
Heet or similar (MeOH)	No comments	Yellow staining	No comments

**Notes**

- ① Present but not as indicia
- ② Copious or unusual quantities
- ③ Present in normal household expectations
- ④ Modified in manner consistent with clanlab use



**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**



# INDIVIDUAL SEWAGE DISPOSAL SYSTEM FIELD FORM

<b>FACTs project name: Capps</b>		<b>Form # ML7</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

	Yes	No	N/C
Does the property have an ISDS		X	
Is there unusual staining around internal drains		X	
Are solvent odors present from the internal drains		X	
Are solvent odors present from the external sewer drain stacks			X
Was the septic tank lid(s) accessible			
Was the leach field line accessible			
Was the septic tank or leach field lines opened			
Are solvent odors present from the leach field lines (if "yes" see below)			
Are solvent odors present from the septic tank (if "yes" see below)			
Is "slick" present in the septic tank			
Are biphasic (aqueous-organic) layers present in the septic tank			
Was pH measured in the septic tank (pH =7 to 8)			
Were organic vapours measured in the septic tank (if "yes" see below)			
Is there evidence of wastes being disposed down internal drains		X	
Is sampling of the ISDS warranted			
Were calawasi/drum thief samples collected from the septic tank			

\*NC = Not checked

## Qualitative Organic Vapor Monitoring

Hydrocarbon detector model	EnMet Target Series, MOS detector
XXXXXXXXXXXX	XXXXXXXXXXXX
XXXXXXXXXXXX	XXXXXXXXXXXX
XXXXXXXXXXXX	XXXXXXXXXXXX
XXXXXXXXXXXX	XXXXXXXXXXXX

Location	MOS*	PID*	FID*
The Following Section is BLANK			

\*Units of measurement are in parts per million equivalents compared to the calibration vapor.


















**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

## PRE-REMEDIATION PHOTOGRAPH LOG SHEET

<b>FACTs project name: Capps</b>		<b>Form # ML8</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

### Cursory Photos:

Name	Date t...	
 <b>Bathroom</b> JPEG Image 2.33 MB	 <b>Bathroom (2)</b> JPEG Image 1.99 MB	 <b>Bathroom (3)</b> JPEG Image 2.17 MB
 <b>NW Bedroom</b> JPEG Image 2.09 MB	 <b>Living room</b> JPEG Image 2.24 MB	 <b>Kitchen</b> JPEG Image 2.35 MB
 <b>SW Bedroom</b> JPEG Image 2.47 MB	 <b>Living Room (2)</b> JPEG Image 1.99 MB	 <b>Garage</b> JPEG Image 2.42 MB
 <b>Attic</b> JPEG Image 2.41 MB	 <b>Crawlspace</b> JPEG Image 2.18 MB	 <b>Crawlspace (2)</b> JPEG Image 2.70 MB
 <b>Crawlspace (3)</b> JPEG Image 2.48 MB	 <b>Crawlspace (4)</b> JPEG Image 2.57 MB	 <b>Crawlspace (5)</b> JPEG Image 2.51 MB



































FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.



# PRE-REMEDATION PHOTOGRAPH LOG SHEET

<b>FACTs project name: Capps</b>		<b>Form # ML8</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhín P. Connell, Forensic IH</b>	

## Preliminary Assessment Photographs

Name ^	Date taken	#	
 <b>Attic</b> JPEG Image 3.01 MB	 <b>Attic (2)</b> JPEG Image 2.53 MB	 <b>Attic (3)</b> JPEG Image 2.28 MB	 <b>Attic (4)</b> JPEG Image 2.92 MB
 <b>Attic (5)</b> JPEG Image 2.58 MB	 <b>Attic (6)</b> JPEG Image 2.54 MB	 <b>Attic (7)</b> JPEG Image 2.40 MB	 <b>Attic (8)</b> JPEG Image 2.80 MB
 <b>Bathroom</b> JPEG Image 1.72 MB	 <b>Bathroom (2)</b> JPEG Image 1.69 MB	 <b>Bathroom (3)</b> JPEG Image 1.55 MB	 <b>Bathroom (4)</b> JPEG Image 1.66 MB
 <b>Bathroom (5)</b> JPEG Image 1.69 MB	 <b>Bathroom (6)</b> JPEG Image 1.77 MB	 <b>Bathroom (7)</b> JPEG Image 1.73 MB	 <b>Bathroom (8)</b> JPEG Image 1.57 MB
 <b>Conf Plumbing</b> JPEG Image 1.92 MB	 <b>Crawlspace</b> JPEG Image 2.26 MB	 <b>Crawlspace (2)</b> JPEG Image 2.75 MB	 <b>Crawlspace (3)</b> JPEG Image 2.54 MB
 <b>Crawlspace (4)</b> JPEG Image 2.68 MB	 <b>Crawlspace (5)</b> JPEG Image 2.51 MB	 <b>Crawlspace (6)</b> JPEG Image 2.56 MB	 <b>Crawlspace (7)</b> JPEG Image 2.70 MB
 <b>Crawlspace (8)</b> JPEG Image 2.88 MB	 <b>Crawlspace (9)</b> JPEG Image 2.55 MB	 <b>Crawlspace (10)</b> JPEG Image 2.45 MB	 <b>Crawlspace (11)</b> JPEG Image 2.56 MB
 <b>Crawlspace (12)</b> JPEG Image 2.88 MB	 <b>Exterior</b> JPEG Image 3.01 MB	 <b>Exterior (2)</b> JPEG Image 2.93 MB	 <b>Exterior (3)</b> JPEG Image 3.67 MB



































FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.

## PRE-REMEDATION PHOTOGRAPH LOG SHEET

<b>FACTs project name: Capps</b>		<b>Form # ML8</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhín P. Connell, Forensic IH</b>	

### Preliminary Assessment Photographs

Name	Date taken	#	
 <b>Exterior (4)</b> JPEG Image 4.58 MB	 <b>Exterior (5)</b> JPEG Image 3.72 MB	 <b>Exterior (6)</b> JPEG Image 4.54 MB	 <b>Exterior (7)</b> JPEG Image 4.56 MB
 <b>Exterior (8)</b> JPEG Image 3.61 MB	 <b>Exterior (9)</b> JPEG Image 3.11 MB	 <b>Exterior (10)</b> JPEG Image 3.41 MB	 <b>Exterior (11)</b> JPEG Image 4.28 MB
 <b>Exterior (12)</b> JPEG Image 3.91 MB	 <b>Exterior (13)</b> JPEG Image 4.54 MB	 <b>Exterior (14)</b> JPEG Image 2.78 MB	 <b>Garage</b> JPEG Image 2.17 MB
 <b>Garage (2)</b> JPEG Image 2.01 MB	 <b>Garage (3)</b> JPEG Image 1.82 MB	 <b>Garage (4)</b> JPEG Image 2.15 MB	 <b>Hall</b> JPEG Image 1.49 MB
 <b>Hall (2)</b> JPEG Image 1.45 MB	 <b>Hall (3)</b> JPEG Image 1.42 MB	 <b>Hall (4)</b> JPEG Image 1.68 MB	 <b>Hall (5)</b> JPEG Image 1.59 MB
 <b>Hall (6)</b> JPEG Image 1.69 MB	 <b>Hall (7)</b> JPEG Image 1.87 MB	 <b>Hall (8)</b> JPEG Image 1.72 MB	 <b>Hall (9)</b> JPEG Image 1.68 MB
 <b>Hall (10)</b> JPEG Image 1.96 MB	 <b>Hall (11)</b> JPEG Image 1.75 MB	 <b>Hall (12)</b> JPEG Image 1.63 MB	 <b>Kitchen</b> JPEG Image 1.71 MB
 <b>Kitchen (2)</b> JPEG Image 1.75 MB	 <b>Kitchen (3)</b> JPEG Image 1.74 MB	 <b>Kitchen (4)</b> JPEG Image 1.71 MB	 <b>Kitchen (5)</b> JPEG Image 1.66 MB



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## PRE-REMEDIATION PHOTOGRAPH LOG SHEET

<b>FACTs project name: Capps</b>		<b>Form # ML8</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

### Preliminary Assessment Photographs

Name	Date taken	#	
Kitchen (6) JPEG Image 1.77 MB	Kitchen (7) JPEG Image 1.60 MB	Kitchen (8) JPEG Image 1.72 MB	Kitchen (9) JPEG Image 1.86 MB
Kitchen (10) JPEG Image 1.72 MB	Kitchen (11) JPEG Image 1.69 MB	Kitchen (12) JPEG Image 1.84 MB	Kitchen (13) JPEG Image 1.83 MB
Kitchen (14) JPEG Image 2.29 MB	Kitchen (15) JPEG Image 2.01 MB	Kitchen (16) JPEG Image 1.99 MB	Kitchen (17) JPEG Image 1.73 MB
Kitchen (19) JPEG Image 1.90 MB	Kitchen (20) JPEG Image 1.97 MB	Kitchen (21) JPEG Image 2.04 MB	Living Room JPEG Image 1.59 MB
Living Room (2) JPEG Image 1.82 MB	Living Room (3) JPEG Image 1.85 MB	Living Room (4) JPEG Image 1.84 MB	Living Room (5) JPEG Image 1.70 MB
Living Room (6) JPEG Image 1.78 MB	Living Room (7) JPEG Image 1.74 MB	Living Room (8) JPEG Image 1.62 MB	Living Room (9) JPEG Image 1.73 MB
Living Room (10) JPEG Image 1.85 MB	Living Room (11) JPEG Image 1.94 MB	Living Room (12) JPEG Image 1.77 MB	Living Room (13) JPEG Image 1.73 MB
Livingroom JPEG Image 1.65 MB	Livingroom (2) JPEG Image 2.18 MB	Livingroom (3) JPEG Image 1.74 MB	Livingroom (4) JPEG Image 1.88 MB
Livingroom (5) JPEG Image 1.64 MB	Livingroom (6) JPEG Image 1.63 MB	Livingroom (7) JPEG Image 1.70 MB	Livingroom (8) JPEG Image 1.67 MB
Livingroom (9) JPEG Image 1.71 MB	NW Bedroom JPEG Image 1.66 MB	NW Bedroom (2) JPEG Image 1.64 MB	NW Bedroom (3) JPEG Image 1.73 MB
NW Bedroom (4) JPEG Image 1.74 MB	NW Bedroom (5) JPEG Image 1.66 MB	NW Bedroom (6) JPEG Image 1.72 MB	NW Bedroom (7) JPEG Image 1.96 MB
NW Bedroom (8) JPEG Image 1.71 MB	NW Bedroom (9) JPEG Image 1.80 MB	SW Bedroom JPEG Image 1.71 MB	SW Bedroom (2) JPEG Image 1.43 MB
SW Bedroom (3) JPEG Image 1.66 MB	Video Video Clip 147 MB	Video.THM THM File 10.8 KB	



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**POST-REMEDIATION PHOTOGRAPH LOG SHEET**

<b>FACTs project name: Capps</b>		<b>Form # ML9</b>
<b>Date: April 14, 2010</b>		
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>	

Not Applicable





### **DRAWING OF STORAGE/DISPOSAL AREA(S)**

**FACTs project name: Capps**

Form # ML11

**Date: April 14, 2010**

### Reporting IH:

**Caoimhín P. Connell, Forensic IH**

A large grid of graph paper, consisting of a 20x20 square of smaller squares. In the center of the grid is a white rectangular area, approximately 10 squares wide and 10 squares high. Inside this white area, the text "See Body of Report" is written in a black, sans-serif font, centered both horizontally and vertically. The text is positioned roughly in the middle of the grid, with about 5 squares of grid paper above and below it, and 5 squares to the left and right of it.

Each grid equals approximately \_\_\_\_\_ (Approximate lay-out; Not to scale)

Describe the area: \_\_\_\_\_

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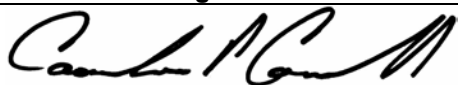

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**CERTIFICATION, VARIATIONS AND SIGNATURE SHEET**

<b>FACTs project name: Capps</b>	<b>Form # ML14</b>
<b>Date: April 14, 2010</b>	
<b>Reporting IH:</b>	<b>Caoimhín P. Connell, Forensic IH</b>

## Certification

Statement	Signature
I do hereby certify that I conducted a preliminary assessment of the subject property in accordance with 6 CCR 1014-3, § 4.	
<del>I do hereby certify that the property has been decontaminated in accordance with the procedures set forth in 6 CCR 1014-3, § 5.</del>	Not Applicable
<del>I do hereby certify that I conducted post-decontamination clearance sampling in accordance with 6 CCR 1014-3, § 6.</del>	Not Applicable
<del>I do hereby certify that the cleanup standards established by 6 CCR 1014-3, § 7 have been met as evidenced by testing I conducted.</del>	Not Applicable
I do hereby certify that the analytical results reported here are faithfully reproduced.	

In the section below, describe any variations from the standard.

**Pursuant to the language required in 6 CCR 1014-3, § 8:**

I do hereby certify that I conducted a preliminary assessment of the subject property in accordance with 6 CCR 1014-3, § 4. ~~I further certify that the cleanup standards established by 6 CCR 1014-3, § 7 have been met as evidenced by testing I conducted.~~

Signature



Date: April 28, 2010

**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**





## FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.

### CONSULTANT STATEMENT OF QUALIFICATIONS

(as required by State Board of Health Regulations 6 CCR 1014-3 Section 8.21)

<b>FACTs project name:</b>	<b>Capps</b>	<b>Form # ML15</b>
<b>Date:</b>	<b>April 27, 2010</b>	
<b>Reporting IH:</b>	<b>Caoimhín P. Connell, Forensic IH</b>	

Caoimhín P. Connell, is a private consulting forensic Industrial Hygienist meeting the definition of an "Industrial Hygienist" as that term is defined in the Colorado Revised Statutes §24-30-1402. He has been a practicing Industrial Hygienist in the State of Colorado since 1987; is the contract Industrial Hygienist for the National Center for Atmospheric Research and has been involved in clandestine drug lab (including meth-lab) investigations since 2002.

Mr. Connell is a recognized authority in methlab operations and is a Certified Meth-Lab Safety Instructor through the Colorado Regional Community Policing Institute (Colorado Department of Public Safety, Division of Criminal Justice). Mr. Connell has provided over 200 hours of methlab training for officers of over 25 Colorado Police agencies, 20 Sheriff's Offices, federal agents, and probation and parole officers from the 2<sup>nd</sup>, 7<sup>th</sup> and 9<sup>th</sup> Colorado judicial districts. He has provided meth-lab lectures to prestigious organizations such as the County Sheriff's of Colorado, the American Industrial Hygiene Association, and the National Safety Council.

Mr. Connell is Colorado's only private consulting Industrial Hygienist certified by the Office of National Drug Control Policy High Intensity Drug Trafficking Area Clandestine Drug Lab Safety Program, and P.O.S.T. certified by the Colorado Department of Law (Certification Number B-10670); he is a member of the Colorado Drug Investigators Association, the American Industrial Hygiene Association, Department of Defense/FBI InterAgency Board peer subject matter expert for the Health, Medical, and Responder Safety SubGroup, and the Occupational Hygiene Society of Ireland. Mr. Connell will be conducting the AIHA 2010 Clandestine Drug Lab Professional Development Course.

He has received over 120 hours of highly specialized law-enforcement sensitive training in meth-labs and clan-labs (including manufacturing and identification of booby-traps commonly found at meth-labs) through the Iowa National Guard/Midwest Counterdrug Training Center and the Florida National Guard/Multijurisdictional Counterdrug Task Force, St. Petersburg College as well as through the U.S. Bureau of Justice Assistance (US Dept. of Justice). Additionally, he received extensive training in the Colorado Revised Statutes, including Title 18, Article 18 "Uniform Controlled Substances Act of 1992."

Mr. Connell is also a current law enforcement officer in the State of Colorado, who has conducted clandestine laboratory investigations and performed risk, contamination, hazard and exposure assessments from both the law enforcement (criminal) perspective, and from the civil perspective in residences, apartments, motor vehicles, and condominiums. Mr. Connell has conducted over 170 assessments in illegal drug labs, and collected over 1,400 samples during assessments (a detailed list of experience is available on the web at: <http://forensic-applications.com/meth/DrugLabExperience2.pdf>)

He has extensive experience performing assessments pursuant to the Colorado meth-lab regulation, 6 CCR 1014-3, (State Board Of Health *Regulations Pertaining to the Cleanup of Methamphetamine Laboratories*) and was an original team member on two of the legislative working-groups which wrote the regulations for the State of Colorado. Mr. Connell was the primary contributing author of Appendix A (*Sampling Methods And Procedures*) and Attachment to Appendix A (*Sampling Methods And Procedures Sampling Theory*) of the Colorado regulations. He has provided expert witness testimony in civil cases and testified before the Colorado Board of Health and Colorado Legislature Judicial Committee regarding methlab issues. Mr. Connell has provided private consumers, state officials and Federal Government representatives with forensic arguments against fraudulent industrial hygienists and other unauthorized consultants performing invalid methlab assessments.

Mr. Connell, who is a committee member of the ASTM International Forensic Sciences Committee, was the sole sponsor of the draft ASTM E50 *Standard Practice for the Assessment of Contamination at Suspected Clandestine Drug Laboratories*, and he is an author of a recent (2007) AIHA Publication on methlab assessment and remediation.

**185 BOUNTY HUNTER'S LANE, BAILEY, COLORADO 80421**  
**PHONE: 303-903-7494** [www.forensic-applications.com](http://www.forensic-applications.com)

## FINAL DOCUMENTATION CHECKLIST

<b>FACTs project name: Capps</b>	<b>Form # ML16</b>
<b>Date: April 14, 2010</b>	
<b>Reporting IH:</b>	<b>Caoimhin P. Connell, Forensic IH</b>

Mandatory Final Documents 6-CCR 1014-3	DOCUMENTATION	Included
§8.1	Property description field form	<i>Carl</i>
§8.2	Description of manufacturing methods and chemicals	<i>Carl</i>
§8.3	Law Enforcement documentation review discussion	<i>Carl</i>
§8.4	Description and Drawing of Storage area(s)	<i>Carl</i>
§8.5	Description and Drawing of Waste area(s)	<i>Carl</i>
§8.6	Description and Drawing of Cook area(s)	<i>Carl</i>
§8.7	Field observations field form	<i>Carl</i>
	FACTs Functional Space inventory field form	<i>Carl</i>
§8.8	Plumbing inspection field form	<i>Carl</i>
	FACTs ISDS field form	<i>Carl</i>
§8.9	Contamination migration field form	<i>Carl</i>
§8.10	Identification of common ventilation systems	<i>Carl</i>
§8.11	Description of the sampling procedures and QA/QC	<i>Carl</i>
§8.12	Analytical Description and Laboratory QA/QC	<i>Carl</i>
§8.13	Location and results of initial sampling with figure	<i>Carl</i>
§8.14	FACTs health and safety procedures in accordance with OSHA	<i>Carl</i>
§8.15	Contractor's description of decontamination procedures and each area that was decontaminated	NA
§8.16	Contractor's description of removal procedures each area where removal was conducted, and the materials removed	NA
§8.17	Contractor's description of encapsulation areas and materials	NA
§8.18	Contractor's description of waste management procedures	NA
§8.19	Drawing, location and results of final verification samples	<i>Carl</i>
§8.20	FACTs Pre-remediation photographs and log	<i>Carl</i>
	FACTs Post-remediation photographs and log	NA
§8.21	FACTs SOQ	<i>Carl</i>
§8.22	Certification of procedures, results, and variations	<i>Carl</i>
§8.23	Mandatory Certification Language	<i>Carl</i>
§8.24	Signature Sheet	<i>Carl</i>
	Analytical Laboratory Reports	<i>Carl</i>
	FACTs Field Sampling Forms	<i>Carl</i>



**FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.**

## **APPENDIX B**

### **ANALYTICAL REPORTS FOR FACTS SAMPLES**

## SAMPLING FIELD FORM

<b>FACTs project name: Capps</b>	<b>Form # ML17</b>
<b>Date: April 14, 2010</b>	<b>Alcohol Lot#: A0901      Gauze Lot#: G1001</b>
<b>Reporting IH: Caoimhín P. Connell, Forensic IH</b>	<b>Preliminary X   Intermediate ____   Final ____</b>

Sample ID CM041410-	Type	Area/ Volume/ Weight	Location	Func. Space	Dimensions	Sub	Result
-01	W		Attic – top of galvanized pipe	7	4.5" X 18"	Metal	
-02	W		Garage - Top of garage door mechanism	8	9" X 9"	Plastic	
-03	W		Crawlspace –Side of metallic makeup air stack	9	9" X 9"	Metal	
-05	W		Furnace interior collected from living room supply	NA	(11.5" X 4") X2	Metal	
-04	W		Field BX				

Sample Types: W=Wipe; V=Microvacuum; A=Air; B=Bulk; L=liquid

Surfaces: DW= Drywall, P=Painted; W= Wood, L= Laminated, V= Varnished, M= Metal, C=Ceramic, PI=Plastic

Sample #1 was 5% under-sampled

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FORENSIC APPLICATIONS CONSULTING TECHNOLOGIES, INC.



# ANALYTICAL CHEMISTRY INC.

Established in 1979

4611 S. 134th Place, Ste 200  
Tukwila WA 98168-3240

Website: [www.acilabs.com](http://www.acilabs.com)

Phone: 206-622-8353

E-mail: [info@acilabs.com](mailto:info@acilabs.com)

<b>Lab Reference:</b>	10122-04
<b>Date Received:</b>	April 20, 2010
<b>Date Completed:</b>	April 21, 2010

April 22, 2010

CAOIMHIN P CONNELL  
FORENSIC APPLICATIONS INC  
185 BOUNTY HUNTER'S LN  
BAILEY CO 80421

**CLIENT REF:** Capps

**SAMPLES:** wipes/5

**ANALYSIS:** Methamphetamine by Gas Chromatography-Mass Spectrometry.

**RESULTS:** in total micrograms (ug)

<b>Sample</b>	<b>Methamphetamine, ug</b>	<b>% Surrogate Recovery</b>
CM041410 - 01	9.49	99
CM041410 - 02	6.78	98
CM041410 - 03	52.1	97
CM041410 - 04	< 0.030	104
CM041410 - 05	122	92
QA/QC Method Blank	< 0.004	
QC 0.100 ug Standard	0.102	
QA 0.020 ug Matrix Spike	0.020	
QA 0.020 ug Matrix Spike Duplicate	0.019	
Method Detection Limit (MDL)	0.004	
Practical Quantitation Limit (PQL)	0.030	

'<': less than, not detected above the PQL

Robert M. Orheim  
Director of Laboratories



Page 1 of 1  
Please do not write in shaded areas.

SAMPLING DATE:		April 14, 2010		REPORT TO:		Caoimhin P. Connell		ANALYSIS REQUESTED						
PROJECT Name/No:		Capps		COMPANY:		Forensic Applications, Inc.								
eMail:		Fiosrach@aol.com		ADDRESS:		185 Bounty Hunters Lane, Bailey, CO 80421								
SAMPLER NAME:		Caoimhin P. Connell		PHONE		303-903-7494								
LAB Number	Sample Number	SAMPLE MATRIX			ANALYSIS REQUESTS						SAMPLER COMMENTS	LAB COMMENTS	No of Containers	
		Wipe	Vacuum	Other	1	2	3	4	5	6				
	CM041410-01	X			X	X								1
	CM041410-02	X			X	X								1
	CM041410-03	X			X	X								1
	CM041410-04	X			X	X								1
	CM041410-05	X			X	X								1
	CM041410-06	X			X	X								0
	CM041410-07	X			X	X								0
					X									
					X									
					X									
CHAIN OF CUSTODY RECORD		Wipes Results in:			<input type="checkbox"/> µg/100cm <sup>2</sup>	<input checked="" type="checkbox"/> Total µg					Total Number of Containers (verified by laboratory)			5
PRINT NAME	Signature	COMPANY	DATE	TIME	Turnaround Time	Custody Seals:		Yes	No	Container:		Intact	Broken	
Caoimhin P. Connell	<i>C Connell</i>	FACTS, Inc.	4/15/10	14:10	<input type="checkbox"/> 24 Hours (2X)			<input checked="" type="checkbox"/>		Temperature:		Ambient	Cooled	
MIA SA20N	<i>adg</i>	ACT	4/26/10	1500	<input type="checkbox"/> 2 Days (1.75X)			<input type="checkbox"/>		Inspected By:		MIA SA20N		
					<input type="checkbox"/> 3 Days (1.5X)			<input checked="" type="checkbox"/> Routing		Lab File No.		10122-04		

**APPENDIX C**

**COMPACT DIGITAL DISK**  
**(PHOTOGRAPHS AND ADDITIONAL DOCUMENTATION)**

